

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as indicated below. The amendments include a claim to priority and an arrangement of sections which follows the Examiner's suggestion (see Detailed Action, Page 3). No new matter has been added.

Please insert the following paragraph and section header at the beginning of the present specification after the TITLE:

-- CROSS REFERENCE TO PRIOR APPLICATIONS

This application is a U.S. National Phase application under 35 U.S.C. § 371 of International Application No. PCT/EP2004/011483, filed on October 9, 2004, and claims benefit to German Patent Application No. DE 103 56 682.1, filed on November 30, 2003. The International Application was published in German on June 9, 2005 as WO 2005/052818 under PCT Article 21(2). --

Please replace the paragraph beginning on page 2, line 3 of the present specification with the following amended paragraph:

-- Many publications deal with interpreting such principles and with the presentation of the current state of the art. Publication I (Werner Nachtigall, "Vorbild Natur--Bionik-Design fuer funktionelles Gestalten", Springer Verlag, 1997) describes the basic principles of natural structures [I, p. 21 seq.]: Nature does not construct additive components maximized to individual main characteristics, but it develops integrated systems optimized in respect of the sum of its requisite characteristics. In nature, the system of energy to be acquired by food intake is confronted by the energetic effort of defense/fleeing on the one hand and of reproduction on the other hand. The more effectively energy can be applied, the greater is the chance of survival. Light yet sturdy structures and detailed adaptations to the most variegated environmental conditions are the result and represent a vast pool of designs which can be utilized by technology. The lotus effect may serve as the best known example of bionic design [I, pages 43-44]. In connection therewith it was possible to demonstrate that surfaces, e.g. those of leaves, very effectively prevent the attachment dirt particles

and water droplets by a defined distribution of micro-roughnesses by water droplets not adhering to the surface but, because of their surface tension, roll across the tips of the roughnesses, absorbing on their path, and taking with them, the dirt which is also attached only to the tips of the roughnesses. This ability enables plants effectively to clean themselves and in doing so to maintain the light absorption necessary for their survival at a high level. This self-cleaning effect can also be on technical surfaces by coating with other materials simulating the roughness of plant leaves. This makes it possible significantly to reduce the otherwise necessary cleaning not only of, for instance, solar cells for maintaining their light absorption, ~~not~~ but also of optical surfaces such as facades of buildings and window panes. There are a number of further examples from the animal kingdom such as, for instance, the utilization of the flow and anti-fouling action of whale skin, the direction-dependent generation of friction of snake skin, etc. However, the publication [I, pages 127-130] offers no detailed description of the model formation in the step principle--zero-model--final version (FIG. 67) required for any technical conversion of such analogies. --

Please replace the paragraph and section headers on page 7, lines 7-16 of the present specification with the following amended paragraph and section headers:

-- OBJECT SUMMARY OF THE INVENTION

~~It is, therefore, In an object of embodiment, the present invention to provides a method of providing~~
obtaining prototype data for a lightweight technical structure which operates especially efficiently
but, nevertheless, reliably. The method ~~is to provide as provides, effectively as possible in terms of~~
time, prototype data with the aid of which a prototype can be produced which ~~closely approximates~~
the technical demands placed upon the lightweight structure to be produced.

~~BRIEF SUMMARY OF THE INVENTION~~ --